
Course Review

Stuart Anderson



Overview

- Review of course.
- Preparing for the exam.
- Identify most-favoured revision topics.
- Feedback questionnaire

It cannae be done captain!

- Program proof is impractical, complete testing ditto for similar reasons plus the fact that a software system in context is much more complex than a “simple” program.
- So grim reality is that we must do the best we can.

Well how, then?

Systematise our testing — what can we test, and can we come up with reusable methods of testing?

- Functional testing
- Structural testing – carries risks and benefits
- Higher level testing – more and more context-sensitive

And when!?

Testing exists in a software lifecycle

- Where in the lifecycle can testing have an impact?
- Design for tests
- Test your designs and specifications
- Static:
 - Black-box: examine specifications
 - White-box: code review
- Dynamic:
 - Black-box: functional testing
 - White-box: structural testing

Isn't easy

Some things can be hard to test:

- System properties such as usability
- GUIs
- Interaction with physical systems

Your tests better than mine?

Can we say some tests are better than others?

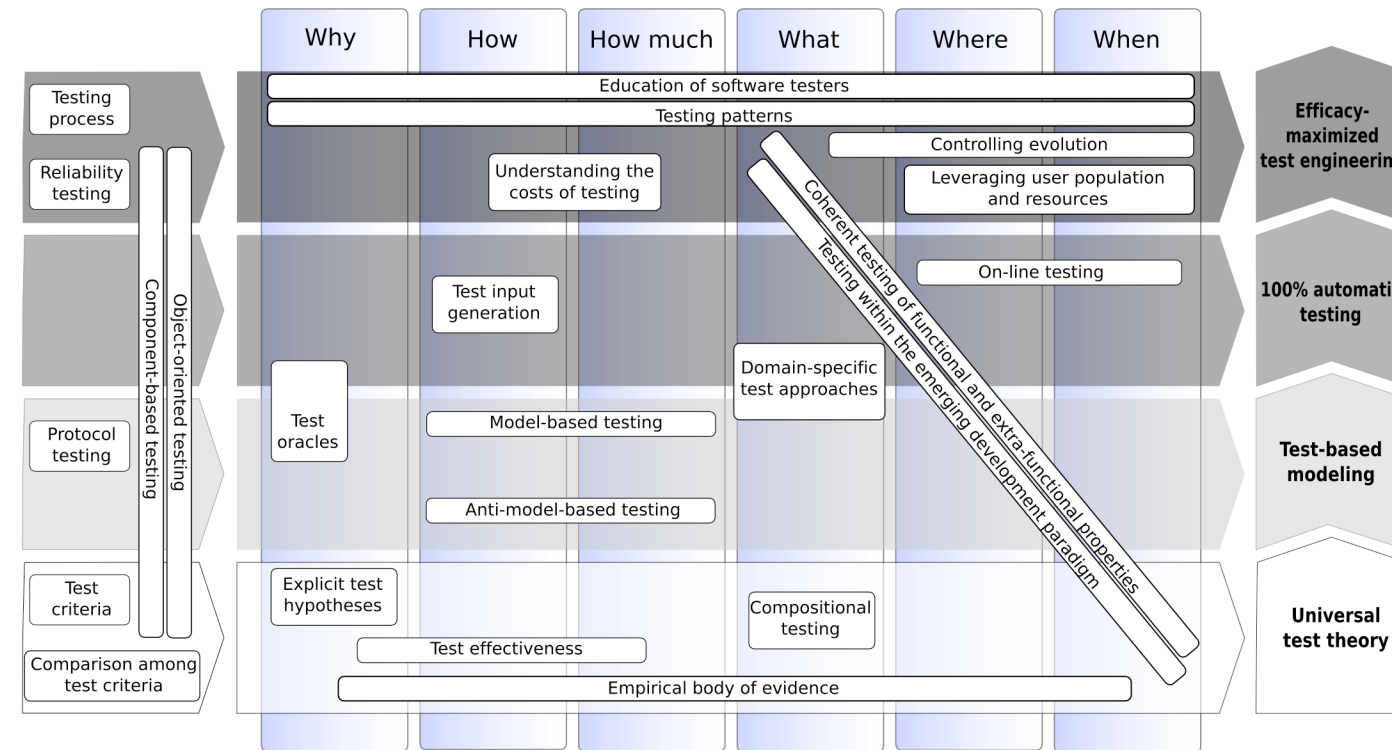
- Adequacy, coverage: running theme throughout – structural, integration, GUI
- Mutations

How does it work?

- Understanding
- Specification
- Implementation
- Lifecycle
- Tools are largely essential, and helped by reflection in Java — Lively field, with lots of new and recent work

Achievements, Challenges, Dreams

Software testing research roadmap



Achievements

Challenges

Dreams

[Bertolino, 2007]

Exam

- No surprises if you pay attention to previous exams
http://www.inf.ed.ac.uk/teaching/exam_papers/
- General topics:
 - Functional testing
 - Structural testing
 - Lifecycle, higher level testing
 - Not exclusive though, and anyway cross-topic knowledge and context is very good for rounding out your answers so don't try ignoring one of these three.
- Aspects which don't get proportional emphasis in the tutorials, so pay attention:
 - Definitions (need to be precise, but not necessarily mathematical)
 - Areas where there's more content than method (lifecycle, integration/regression/GUI/higher level testing)
 - General “big picture” aspects: context, interrelations, themes, etc.

Feedback

Please fill in the feedback questionnaire:

http://www.inf.ed.ac.uk/cgi-bin/ito/course_questionnaire.pl